

**LIST OF ATTACHMENTS TO THE STATEMENT OF WORK****NUMBER DESCRIPTION**

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1. TECHNICAL SPECIFICATIONS
  - Section 01012 - Design After Award (Design/Build)
  - Section 01320 - Project Schedule (Design/Build)
  - Section 01330 - Submittal Procedures (Design/Build)
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2. RESERVED
3. RESERVED
4. PROPOSAL DATA SHEETS
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NOTE: Attachments #2 and #3 are reserved for use by the local Design Districts preparing solicitations. These attachments shall be used to include other project specific information which would be valuable to the Offerors in making their proposals.

Project Name

Project No. \_\_\_\_\_  
UFC 4-721-11.1, UEPH Complexes, 26 Nov 01

**ATTACHMENT 1**  
**TECHNICAL SPECIFICATIONS**

**ATTACHMENT 1****TECHNICAL SPECIFICATIONS****GUIDE SPECIFICATIONS MODIFIED FOR DESIGN-BUILD CONSTRUCTION CONTRACTS:**

Several Guide Specifications, covering contract procedures and execution issues must be modified for design-build construction contracts to reflect the integrated design and construction aspects, as well as the non-traditional roles and responsibilities of the parties. Some of these modified Specifications have been included herein. In addition, we have included a sample Section 01012 "DESIGN AFTER AWARD" modified to suit a typical UEPH construction project. USACE Design District must review, edit, and tailor these specifications to suit the particular project.

**SUBMITTALS (SECTION 01330)**

Design submittals are covered in Division 01 General Requirements, Section 01012 "DESIGN AFTER AWARD". Construction submittal requirements are addressed in, Section 01330, "SUBMITTAL REQUIREMENTS". In design-build contracts, design and construction submittals are generally reviewed for conformance to the contract requirements. They are NOT routinely "reviewed for approval". The only time review for approval is necessary is for totally prescriptive specialty designs for which the Government desires to assume design responsibility. The requirement for approval should be determined during the development of the D-B RFP. The design-build project team needs to be explicit as to what needs Government approval and why the approval is necessary. The team also needs to be explicit as to what needs Government review and that the review is to ensure conformance to the contract requirements. The primary principle to remember is that if the Government chooses to approve the submittal, they may be taking some responsibility from the Contractor on design issues. One of the main advantages of D-B is the single point of responsibility for both design and construction. The Government shifts the risk of design adequacy to the D-B by avoiding assumption of the traditional role of "approval" of design and construction products to the maximum extent possible.

Section 01330 makes the D-B Contractor's Designer(s) of Record responsible for assuring the adequacy and integration of the design, including written approval for all extensions of design, critical materials, any deviations from the solicitation, the accepted proposal, or the completed design, equipment whose compatibility with the entire system must be checked. The Government must concur with deviations to the completed design and must approve deviations to the accepted proposal and RFP; the latter are considered formal "changes", unless inconsequential in scope and cost

This attachment provides the location for the placement of the "font end" type specifications which are used to control contractor overall operations and represent the standards of operation and communication between the Corps Construction District and the contractor.

These specifications are to be listed in the Statement of Work, paragraph 12, CONTRACTOR PREPARED SPECIFICATIONS. The specifications included here should represent the minimum information necessary for the construction Area Office to adequately administer the contract, it is not the intention of this attachment to include material specific technical specifications from the Corps of Engineers Guide Specifications (CEGS) or other similar sources.

Project Name

Project No. \_\_\_\_\_  
UFC 4-721-11.1, UEPH Complexes, 26 Nov 01

Below is a list of specifications which could typically be included in this attachment.

Section 01005	Special Work Requirements and Restrictions
Section 01012	Design After Award (Design/Build)*
Section 01111	Safety and Health Requirements
Section 01200	Project Meetings
Section 01300	Submittal Procedures
Section 01320	Project Schedule (Design/Build)*
Section 01330	Submittal Procedures (Design/Build)*
Section 01451	Contractor Quality Control (Design/Build)*
Section 01500	Temporary Construction Facilities
Section 01560	Environmental Protection
Section 01780	Closeout Submittals
Section 09900	Painting, General
Section 13280	Asbestos Abatement
Section 13283	Removal and Disposal of Lead-Contaminated Paint

*\* Sample specifications edited to suit the design build procurement strategy are included in this UFC for editing and use by Design Districts*

**SECTION 01012  
DESIGN AFTER AWARD**

*[Design Districts shall review and edit this specification as necessary to suit the project.]*

**1.0 GENERAL**

1.1 The Contractor shall propose a schedule for the number and composition of the design submittal phases. As a minimum, design submittals are required at the preliminary (50%), final (100%), and at the design complete stage. The requirements of each design stage are listed hereinafter. The Contractor shall reflect the number and schedules for the design submittals phases in the progress charts. As a maximum, the 50%, 100%, and design complete submittals shall be made in one consolidated package which includes each of the major categories listed in paragraph "Contents of Design Submittals".

*[Design District shall edit and remove the following paragraph if fast track design-construction is not be permitted in the particular project. Fast-track design-construction is the established standard for this program. Designers are cautioned that removal of the fast track option will inherently increase contractor costs and may cause the proposers to eliminate some quality features from the design proposal.]*

1.2 To facilitate fast-track design-construction activities the contractor shall submit a 100% Site/Utility Design as the first design submittal. Following review, resolution, and incorporation of all Government comments, and submittal of a satisfactory set of site/utility design documents, the [insert USACE Construction District] shall issue a limited Notice to Proceed (NTP) which shall allow the contractor to proceed with site development activities within the parameters set forth in the accepted design submittal. Submittal review, comment, and resolution times from this specification apply to this initial 100% Site/Utility Design Submittal. No on-site construction activities shall begin prior to receipt of a construction NTP by the contractor.

**2.0 DESIGNER OF RECORD**

The Contractor shall identify, for approval, the Designer of Record for each area of work. One Designer of Record may be responsible for more than one area. All areas of design disciplines shall be accounted for by a listed, registered Designer of Record. The Designer(s) of Record shall stamp, sign, and date all design drawings under their responsible discipline at each design submittal stage (see SCR - "Registration of Designers" ).

**3.0 DEFINITION OF DESIGN SUBMITTALS**

3.1 First Site/Utility Design Submittal (100%). This submittal is provided to allow the contractor to concentrate initial efforts for the site/utility portions of the project. By allowing this work to be separated, the contractor is given the opportunity to fast track and begin construction on the site/utility work prior to completion of the building designs. This submittal shall consist of the following:

3.1.1 Design analysis, developed to 100%, site work and utility work only.

3.1.2 100% complete site/utility drawings

3.1.3 Final site/utility specifications

3.1.4 Environmental permits, as required. When environmental permits are not required, the Contractor shall provide a statement with justification to that effect.

3.2 Preliminary Conformance Review Submittal (50%). This submittal is intended to insure that the contractor's design is proceeding in accordance with the terms of the solicitation and the contractor's original proposal as well as in a timely manner. This submittal shall consist of the following:

3.2.1 Design analysis, developed to 50%

3.2.2 50% complete drawings

3.2.3 Draft specifications

3.2.4 Site Utility design information need not be included in this submittal package except where interface to the interior building systems is required.

3.3 Final Design Submittal (100%). The review of this submittal is to insure that the design is in accordance with directions provided the Contractor during the design process as well as the original solicitation and the contractor's proposal. The Contractor shall submit the following documents for Final Design Review:

3.3.1 50% review comments and responses.

3.3.2 The Design Analysis submitted for Final Design Review shall be in its final form. The Design Analysis shall include all backup material previously submitted and revised as necessary. All design calculations shall be included. The Design Analysis shall contain all explanatory material giving the design rationale for any design decisions which would not be obvious to an engineer reviewing the Final Drawings and Specifications.

3.3.3 The Contract Drawings submitted for Final Design Review shall include the drawings previously submitted which have been revised and completed as necessary. The Contractor is expected to have completed all of his coordination checks and have the drawings in a design complete condition. The drawings shall be complete at this time including the incorporation of any design review comments generated by the previous design reviews. The drawings shall contain all the details necessary to assure a clear understanding of the work throughout construction. Shop drawings will not be considered as design drawings. All design shall be shown on design drawings prior to submittal of shop drawings.

3.3.4 The Draft Specifications on all items of work submitted for Final Design Review shall consist of legible marked-up specification sections.

3.3.5 Site Utility design information need not be included in this submittal package except where interface to the interior building systems is required.

3.4 Design Complete Submittal. After the Final Design Review, the Contractor shall revise the Contract Documents by incorporating any comments generated during the Final Design Review and shall prepare final hard copy Contract Specifications. The Contractor shall submit the following documents for the design complete submittal:

3.4.1 Design analysis, in final 100% complete form.

3.4.2 100% complete drawings.

3.4.3 Final specifications

3.4.4 Final review comments and responses.

3.4.5 Electronic Submission: All CADD files in native [AutoCAD] [MicroStation] format, as well as all prepared technical specifications shall be provided on CD-ROM. Two copies are required.

### 3.5 Structural Interior Design.

3.5.1 Definition: The Structural Interior Design (SID) shall involve the selection and sampling of all applied finishes including material, color, texture and patterns necessary to complete the building's interior architectural features. The SID shall also include all prewired workstation finishes and required drawings for prewired workstations. This information shall be submitted in 3" D-ring binders, 8-1/2" x 11" format.

3.5.2 Present architectural finish samples in an orderly arrangements according to like rooms/areas receiving like finishes. Each like room receiving like finishes will be noted as a Color Scheme. Each Color Scheme shall have a written description of material used. This written description shall use the same material abbreviations and notes that appear on the Room Finish Schedule and Legend in the contract drawings. Present prewired workstation finishes on a color board separate from the architectural finishes. Submit the SID binders concurrently with the architectural design submittals.

3.5.3 Preliminary Submittals: The Contractor shall submit three complete sets of the initial SID package. The design philosophy shall use a warm neutral background color with appropriate accent colors. All SID proposals shall be reviewed and approved by the Government. The Interior Designer shall revise the SID binders after each review and update the SID to satisfy review comments. Each submittal will follow this method of review until the Government approves the completed SID package.

3.5.4 Final Submittal: After approval of the Preliminary Submittal, the Contractor shall submit three (3) complete sets of the approved and final Structural Interior Design package. Once the Contractor has submitted the SID and the Government has approved the submittal, all materials, finishes, colors, textures and pattern submitted and approved for this project are then considered as part of the contract and the Contractor shall furnish all approved SID finishes. No deviations will be considered.

3.5.5 Format: Submit all SID information and samples on 8 1/2"x 11" modules with only one foldout. The maximum foldout width shall be approximately 25 inches. No foldouts on the top or bottom of the pages. Place the project title, base, architectural firm, page number and date on the bottom of each page or module.

3.5.5.1 The module shall support and anchor all samples. Anchor large or heavy samples with mechanical fasteners, velcro or double sided foam tape. Rubber cement or glue will not be acceptable.

3.5.5.2 Assemble the 8 1/2" x 11" pages and modules in a 3" D-ring binder. Holes for placement of the modules in the binder shall be 3/8" in diameter. Each binder shall be identified on the outside spine and front cover by title, project number, percentage phase and date.

3.5.5.3 Material and finish samples shall indicate true pattern, color and texture. Carpet samples shall be large enough to indicate a complete pattern or design.

3.5.5.4 Where paint manufacturers color names and numbers are used indicated the finish of the paint such as gloss, semi-gloss, flat and so on.

3.5.5.5 Signage may include emblems, striping, letters, numbers and logos. The interior designer shall consider visual appearance, organization, location, structural supports (if required) and relation to other base graphics. Indicate on a separate signage sheet the location and message for all signage. Submit a sample of the signage material finish and color with the structural finishes.

3.5.5.6 No photographs or colored photocopies of materials will be accepted or approved.

3.5.6 The SID Binder shall include the following information at each design submittal in this order:

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**SEQUENCE OF SID SUBMITTAL**

1. Title page
2. Table of contents
3. Design objectives - A statement of design objectives explaining the interior design philosophy of the facility shall be provided in the SID. Design objectives and the proposed method of accomplishing the objectives. Shall cover, when applicable, energy efficiency, safety, health, maintenance, image, personal performance of occupants and functional flexibility.
4. Interior floor plan
5. Interior sample finish boards

Scheme A  
Scheme B  
Scheme C

Example all restrooms could be noted as color scheme "A", all general open office finishes could be noted as color scheme "B" and the main lobby could be noted as color scheme "C".

6. Room finish schedule
7. Signage
8. Signage plan
9. Prewired workstation composite floor plans
10. Prewired workstation typicals - elevations and component inventory.
11. Prewired workstation panel identification plan with electrical outlet placement including base feed.
12. Integration and layout of ACSIM specific furniture. Plan must show suitability of proposed space to suit the furniture to be provided.



**4.0 QUANTITY OF DESIGN SUBMITTALS**

4.1 General. The documents which the Contractor shall submit to the Government for each submittal are listed and generally described hereinafter.

**DISTRIBUTION**

Activity and Address	Drawings Size <Full>	Drawing Size <Half>	Color Boards **
Commander, U.S. Army Engineer District,	*	*	*
Commander, Installation	*	*	*
U.S. Army Corps of Engineers Construction Area Office	*	*	*
[Other As Applicable]	*	*	

\*USACE Design District to complete required quantities based on project requirements.

\*\* Color boards shall be submitted with the 100% building submittal only.

**5.0 MAILING OF DESIGN SUBMITTALS**

5.1 Mail all design submittals to the Government during design and construction, using an overnight mailing service. The Government will furnish the Contractor addresses where each copy shall be mailed to after award of the contract. The submittals shall be mailed to four (4) different addresses.

6.2 Each design submittal shall have a transmittal letter accompanying it indicating the date, design percentage, type of submittal, list of items submitted, transmittal number and point of contact with telephone number.

**6.0 COORDINATION**

6.1 Written Records. The Contractor shall prepare a written record of each design site visit, meeting, or conference, either telephonic or personal, and furnish within five (5) working days copies to the Contracting Officer and all parties involved. The written record shall include subject, names of participants, outline of discussion, and recommendation or conclusions. Number each written record for the particular project under design in consecutive order.

6.2 Design Needs List. Throughout the life of his contract the Contractor shall furnish the COR a monthly "needs" list for design related items. This list shall itemize in an orderly fashion design data

required by the Contractor to advance the design in a timely manner. Each list shall include a sequence number, description of action item, name of the individual or agency responsible for satisfying the action item and remarks. The list will be maintained on a continuous basis with satisfied action items checked off and new action items added as required. Once a request for information is initiated, that item shall remain on the list until the requested information has been furnished or otherwise resolved. Copies of the list will be mailed to both the Administrative Contracting Officer and the agencies tasked with supplying the information.

## **7.0 GOVERNMENT REVIEW**

7.1 Within 30 days after Notice to Proceed, the Contractor shall submit, for approval, a complete design schedule with all submittals and review times indicated in calendar dates. The Contractor shall update this schedule monthly. No design submittals will be reviewed or evaluated until after receipt and acceptance of the proposed design/review schedule.

7.2 After receipt, the Government will be allowed fourteen (14) days to review and comment on each design submittal. For each design review submittal, the COR will furnish, to the Contractor, a single consolidated listing of all comments from the various design sections and from other concerned agencies involved in the review process. The review will be for conformance with the technical requirements of the solicitation and the Successful Offeror's (Contractor's) RFP proposal. If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, he must clearly outline, with ample justification, the reasons for noncompliance within five (5) days after receipt of these comments in order that the comment can be resolved. The Contractor shall furnish disposition of all comments, in writing, with the next scheduled submittal. The Contractor is cautioned in that if he believes the action required by any comment exceeds the requirements of this contract, that he should take no action and notify the COR in writing immediately. Review conferences will be held for each design submittal at (NAME OF BASE). The Contractor shall bring the personnel that developed the design submittal to the review conference. These conferences will take place the week after the receipt of the comments by the Contractor.

7.3 If a design submittal is over one (1) day late in accordance with the latest design schedule, the Government review period will be extended 7 days. Submittals date revisions must be made in writing at least one (1) week prior to the effect submittal.

7.4 Post review conference action: Copies of comments, annotated with comment action agreed on, will be made available to all parties before the conference adjourns. Unresolved problems will be resolved by immediate follow-on action at the end of conferences. Valid comments will be incorporated. After receipt of final corrected design documents upon incorporation of backcheck comments the [USACE Design District] will recommend issuance of a Construction Notice to Proceed (NTP). The Government, however, reserves the right to disapprove design document submittals if comments are significant. If final or backcheck submittal(s) are incomplete or deficient, and require correction by the Contractor and resubmittal for review, the cost of rehandling and reviewing will be deducted from payment due the Contractor at the rate of \$ 5,000.00 per submittal.

## **8.0 DESIGN ANALYSIS**

8.1 Media and Format. Present the design analysis on 8-1/2-inch by 11-inch paper except that larger sheets may be used when required for graphs or other special calculation forms. All sheets shall be in reproducible form. The material may be typewritten, hand lettered, handwritten, or a combination thereof, provided it is legible. Side margins shall be 1-inch minimum to permit side binding and head to head printing. Bottom margins shall be 1-1/4-inches, with page numbers centered 1 inch from the bottom.

8.2 Organization. Assign the several parts and sheets of the design analysis a sequential binding

number and bind them under a cover indicating the name of the facility and project number, if applicable. The title page shall carry the designation of the submittal being made. The complete design analysis presented for final review with the final drawings and specifications shall carry the designation "FINAL DESIGN ANALYSIS" on the title page.

8.3 Design Calculations. Design calculations are a part of the design analysis. When they are voluminous, bind them separately from the narrative part of the design analysis. Present the design calculations in a clean and legible form incorporating a title page and index for each volume. Furnish a table of contents, which shall be an index of the indices, when there is more than one volume. Identify the source of loading conditions, supplementary sketches, graphs, formulae, and references. Explain all assumptions and conclusions. Calculation sheets shall carry the names or initials of the author and the checker and the dates of calculations and checking. No portion of the calculations shall be computed and checked by the same person.

8.4 Automatic Data Processing Systems (ADPS). When ADPS are used to perform design calculations, the design analysis shall include descriptions of the computer programs used and copies of the ADPS input data and output summaries. When the computer output is large, it may be divided into volumes at logical division points. Precede each set of computer printouts by an index and by a description of the computation performed. If several sets of computations are submitted, they shall be accompanied by a general table of contents in addition to the individual indices. Preparation of the description which must accompany each set of ADPS printouts shall include the following:

1. Explain the design method, including assumptions, theories, and formulae.
2. Include applicable diagrams, adequately identified.
3. State exactly the computation performed by the computer.
4. Provide all necessary explanations of the computer printout format, symbols, and abbreviations.
5. Use adequate and consistent notation.
6. Provide sufficient information to permit manual checks of the results.

## 9.0 DRAWINGS

9.1 Prepare all drawings on Computer-Aided Design and Drafting (CADD) so that they are well-arranged and placed for ready reference and so that they present complete information. The Contractor shall prepare the drawings with the expectation that the Corps of Engineers, in the role of supervision, will be able to construct the facility without any additional assistance from the Contractor. Drawings shall be complete, unnecessary work such as duplicate views, notes and lettering, and repetition of details shall not be permitted. Do not show standard details not applicable to the project, and minimize unnecessary wasted space. Do not include details of standard products or items which are adequately covered by specifications on the drawings. Detail the drawings such that conformance with the RFP can be checked and to the extent that shop drawings can be checked. Do not use shop drawings as design drawings. The design documents shall consist of drawings on a 36" x 24" format. The Contractor shall use standard Corps of Engineers title blocks and borders on all drawings. Submit an index of drawings with each submittal. The COR will furnish the Contractor file, drawing, and specification numbers for inclusion in the title blocks of the drawings.

9.2 Create all drawings using CADD methods in MicroStation or AutoCAD format. Save all Design Complete CADD files as MicroStation 5.0 and AutoCAD R14. The Contractor shall use EM 1110-1-1807 Standards Manual for U.S. Army Corps of Engineers Computer-Aided Design and Drafting (CADD) Systems as guidance for standard details, cell libraries, title blocks, and layer/level assignments. Drawing features not addressed in EM 1110-1-1807 shall conform to drafting standards.

9.3 Only standard fonts provided by MicroStation or AutoCAD are allowed to be used in the creation of CADD files. No fonts created by third parties or the designer are permitted.

9.4 The uses of Reference files and Xrefs during the design stage is up to the discretion of the designers. All CADD files at Design Complete submittal shall be free standing, independent files, and not supported by reference files. All Reference files (MicroStation) and all Xrefs files (AutoCAD) shall be removed at Design Complete submittal.

9.5 Submit all Design Complete CADD files on the following media.

- Read/Write CD-ROM Disk

## **10.0 SPECIFICATIONS**

10.1 The Contractor shall submit marked-up and final specifications as required. The specifications may be any one of the major, well known master guide specification sources such as MASTERSPEC from the American Institute of Architects, SPECTEXT from Construction Specification Institute or Corps of Engineers Guide Specifications, etc. Use only one source for the project. Edit the specifications for this project and submit in marked-up or redlined draft version at the Final Review submittal stage. If the design is based on a specific product, the specification shall consist of the important features of the product. The specification shall be detailed enough such that another product meeting the specification could be substituted and it would not adversely impact the project. After incorporation of comments, submit a final, design complete specification package. Delete all marked-out or redlined text and type in all inserted text.

10.2 Submittal Register. Develop the submittal requirements during construction during the design phase of the contract, by producing a Contractor Submittal Register during design. Attach a submittal register to each section of the specifications for the submittal requirements of that section. Prepare the Submittal Register on ENG Form 4288. The Contractor shall be responsible for listing all required submittals necessary to insure the project requirements are complied with. The Register shall identify submittal items such as shop drawings, manufacturer's literature, certificates of compliance, material samples, guarantees, test results, etc that the Contractor shall submit for review and/or approval action during the life of the construction contract. The Contractor shall place all the Submittal Register pages in an appendix of the final specifications.

## **11.0 CONTENTS OF DESIGN SUBMITTALS**

11.1 The 100% site/utility design submittal shall contain as a minimum, the following:

11.1.1 General Narratives:

11.1.1.1 Site/Layout: Explanation of objectives and factors influencing siting decisions. General overview of major site features planned, such as building orientation, drainage patterns, parking provisions, traffic circulation, provisions for the handicapped, security requirements, etc. Rationale for locating major site elements. Set back requirements or specific clearance requirements. Locations of borrow and spoil areas.

11.1.1.2 Utility Systems: Design narrative for the natural gas, water supply, storm drainage, and wastewater systems relating to this project. Include an analysis of the existing distribution systems capability to supply sufficient quantity at adequate levels. If the existing distribution systems are inadequate, provide the design solution to augment the systems to provide the requirements for the new facilities.

11.2 All drawings included in the required technical data for the proposal submission (see SECTION 00110A: PHASE 2 TECHNICAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS), shall be developed to 100 percent completion. In addition to the individual utility plans, submit a combined utility plan drawn to the same scale as the individual utility plans.

11.2.1 General Site Layout: Scale shall be included.

11.2.2 Site Grading and Drainage Plans: Show locations of all sediment basins, diversion ditches, and other erosion control structures. Indicate the approximate drainage areas each will service. Indicate the materials, construction and capacity of each structure. Include limits of landscaping and seeded areas. General site grading and drainage shall be indicated by contour lines with an interval of not more than approximately 1 m [3 feet].

11.2.3 Road Alignment Plans: Scale shall be no greater than as indicated in SECTION 00110A: PHASE 2 TECHNICAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS and profiles showing pavement and shoulder widths, azimuths and curve data, limits of grading, and erosion control. The materials to be used shall be indicated.

11.2.4 Traffic Control Plan: Traffic routing and signage shall be in accordance with The Manual on Uniform Traffic Control Devices for Streets and Highways, U.S. Department of Transportation, Federal Highways Administration.

11.2.5 Sanitary Sewer Plan: Scale shall be as indicated in SECTION 00110A: PHASE 2 TECHNICAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS and profiles showing location and elevation of pipe, thrust blocks, manholes, etc. Materials and construction of main and appurtenances shall be indicated. Specifications shall be provided.

11.2.6 Water Supply Line Plans: Scale shall be as indicated in SECTION 00110A: PHASE 2 TECHNICAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS and profiles showing locations of valves, thrust blocks, connections, etc. Materials shall be indicated and specifications shall be provided for valves, pipes, etc.

11.2.7 Electrical Plan Requirements:

11.1.7.1 Required diagrams and details on Site Electrical Drawings.

11.1.7.1.a. Off-Site Electrical Distribution Plan:

11.1.7.1.b. Off-Site Primary Circuit Routing Plans:

11.1.7.1.c. Off-Site One Line Diagram. (If applicable)

11.1.7.1.d. Off-Site Details. (Aerial Pole Line Construction, etc.) (If applicable).

11.1.7.1.e. On-Site Electrical Distribution Plan:

11.1.7.1.f. On-Site One Line Diagram.

11.1.7.1.g. On-Site Distribution Transformer Schedule: Provide with the following headings:  
Transformer Designation. Transformer Size (KVA). Building(s) Served.  
Primary Phase(s) and Circuit to which connected.

11.1.7.1.h. On-Site Details (Site Lighting, Trenching, Pad-Mounted Transformer, etc.).

11.1.8 Specifications: Provide final draft specifications which include all sections which apply to site/utility work.

11.1.9 Design Analysis: Design analysis shall include design calculations fully developed to support the design of the site and utility systems included in this submittal.

11.1.10 Geotechnical: Soils analysis and geotechnical report. Geotechnical information must be provided to support all assumptions and design parameters utilized in the presented site/utility design as applicable.

11.2 The 50% design submittal shall contain as a minimum, the following:

*[Design District shall delete the following paragraph where irrigation systems are not authorized or required.]*

11.2.1 Lawn and Landscaping Irrigation System: The design submittal shall include drawings clearly showing the piping layout and location of sprinkler heads coordinated with the landscaping plan, control valves, backflow preventers, rain check switches, controllers, etc. Indicate buildings, walks, shrubbery, trees, and other obstacles that might interfere with the proper operation of the sprinkler system. A design analysis calculating the pressures at each sprinkler head for the capacity and radius of throw is required. Details of the sprinkler head installation, valve boxes, and other irrigation appurtenances shall be submitted.

#### 11.2.2 Landscape, Planting and Turfing

11.2.2.1 The landscape planting design narrative shall describe the analysis of existing site conditions, including an indication of existing plant materials that are to remain on the site. The statement of concept shall indicate specific site problems related to proposed development and the rationale for proposed plant locations. The narrative shall also include a list of suggested types and sizes of plant materials which are to be used, based upon the designated functional and visual criteria.

11.2.2.2 The concept drawings shall be prepared at a scale which corresponds with the site layout and grading plans and, likewise, shall include reference coordinates, north arrows, graphic scales and appropriate legends. An overall planting layout shall be developed and shall include enlarged detail plans of specific areas, as needed, to clarify requirements. The proposed layout shall indicate shade trees, evergreen trees, flowering trees, shrub masses, etc., according to designated functional and visual locations of planting. A legend which also indicates sizes of plants recommended for each of the above categories shall be included. The drawings and all subsequent plans shall indicate existing and proposed buildings, paved areas, signs, light standards, transformers, dumpster areas, storm drainage system, and other structures and utilities.

#### 11.2.3 Architectural

11.2.3.1 Design narrative shall provide a summary of functional space relationships, as well as circulation. There shall also be a general statement for the rationale behind the major design decisions.

11.2.3.2 Architectural Floor Plans shall indicate dimensions, columns lines, and detail references. Toilets and other specialized areas shall be drawn to 1/4" scale and shall show any needed interior features.

11.2.3.3 Finish schedule shall indicate material, finishes, colors and any special interior design features such as soffits, fascias, and lighting troughs, etc.

11.2.3.4 All required equipment shall be shown on the drawings with an equipment list.

11.2.3.5 List any special graphics requirements that will be provided.

11.2.3.6 Schedules shall be provided for both doors and windows. These schedules shall indicate sizes, types, and details for all items shown on floor plans.

11.2.3.7 Hardware sets using BHMA designations.

11.2.3.8 Composite floor plan showing all prewired workstations. Also show typical elevations of each type of workstation.

11.2.3.9 SID package.

11.2.3.10 Fire Protection and Life Safety Analysis. This analysis must be performed by a Registered Fire Protection Engineer (FPE). NICET certification is not sufficient to address this requirement.

#### 11.2.4 Structural Systems

11.2.4.1 State the live loads to be used for design. Include roof and floor loads; wind loads, lateral earth pressure loads, seismic loads, etc., as applicable.

11.2.4.2 Describe the method of providing lateral stability for the structural system to meet seismic and wind load requirements. Include sufficient calculations to verify the adequacy of the method.

11.2.4.3 Furnish calculations for all principal roof, floor, and foundation members.

11.2.4.4 This submittal shall include drawings showing roof and floor framing plans as applicable. Principal members will be shown on the plans. A foundation plan shall also be furnished showing main footings and grade beams where applicable. Where beam, column, and footing schedules are used, show schedules and fill in sufficient items to indicate method to be used. Show typical bar bending diagram if applicable. Typical sections shall be furnished for roof, floor, and foundation conditions. Structural drawings for proposals and submittals shall be separate from architectural drawings.

11.2.4.5 Provide any computer analyses used shall be widely accepted, commercially available programs and complete documentation of the input and output of the program.

11.2.4.6 Provide complete seismic analyses for all building structural components. Seismic calculations shall clearly demonstrate compliance with all requirements set forth in the Statement of Work.

#### 11.2.5 Plumbing Systems

11.2.5.1 List all references used in the design including Government design documents and industry standards.

11.2.5.2 Provide justification and brief description of the types of plumbing fixtures, piping materials and equipment proposed for use.

11.2.5.3 Prepare detail calculations for systems such as sizing of domestic hot water heater and piping; natural gas piping; [lp gas piping and tanks] [fuel oil piping and tanks].

11.2.5.4. Indicate locations and general arrangement of plumbing fixtures and major equipment.

11.2.5.5 Include plan and isometric riser diagrams of all areas including hot water, cold water, waste and vent piping. Piping layouts and risers should also include natural gas (and meter as required), [LP gas], [fuel oil] and other specialty systems as applicable.

11.2.5.6 Include equipment and fixture connection schedules with descriptions, capacities, locations, connection sizes and other information as required.

#### 11.2.6 Fire Protection/Suppression

11.2.6.1 List all references used in the design including Government design documents and industry standards used to generate the fire protection analysis.

11.2.6.2 Classify each building in accordance with fire zone, building floor areas and height and number of stories. This information shall be contained in the fire protection analysis.

11.2.6.3 Discuss and provide description of required fire protection requirements including extinguishing equipment, detection equipment, alarm equipment [and water supply]. Alarm and detection equipment shall interface to requirements of Electronic Systems. This information shall be contained in the fire protection design analysis.

11.2.6.4 Prepare a plan for each floor of each building that presents a compendium of the total fire protection features being incorporated into the design. Provide the following types of information:

The location and rating of any fire-resistive construction such as occupancy separations, area separations, exterior walls, shaft enclosures, corridors, stair enclosures, exit passageways, etc.

The location and coverage of any fire detection systems.

The location and coverage of any fire suppression systems (sprinkler risers, standpipes, etc.).

The location of any other major fire protection equipment.

Indicate any hazardous areas and their classification.

11.2.6.5 Prepare a schedule describing the internal systems with the following information: fire hazard and occupancy classifications, building construction type, GPM/square foot sprinkler density, area of operation and other as required.

[11.2.6.6 Hydraulic calculations based on water flow test shall be prepared for each sprinkler system to insure that flow and pressure requirements can be met with current water supply. Include copies of contractor water flow testing done to certify the available water source.]

#### 11.2.7 Elevators

11.2.7.1 A list of criteria codes, documents and design conditions used. Reference to any authorized waiver of these criteria or codes.

11.2.7.2 Permits and Registration: Provide a list of all required permits and registrations for construction of items of special mechanical systems and equipment.

11.2.7.3 A description of the proposed control system.

11.2.7.4 Description, approximate capacity and location of any special mechanical equipment such as elevators, etc.

11.2.8 Electronic Systems: Electronic Systems responsibilities include the following:

Fire Detection and Alarm System  
Fire Suppression System Control  
Public Address System  
Telephone System  
Cable Television System  
Special Grounding Systems  
Cathodic Protection  
Intrusion Detection, Card Access System  
Central Control and Monitoring System

11.2.8.1 The design analysis shall include all calculations required to support design decisions and estimates at this stage of design. The analysis shall include specific criteria furnished, conference minutes and cost analyses of all systems considered.

11.2.8.2 Design of the fire alarm and detection system shall include layout drawings for all devices and a riser diagram showing the control panel, annunciator panel, all zones, radio transmitter and interfaces to other systems (HVAC, sprinkler, etc.).



11.2.8.3 Specify all components of the Fire Suppression (FS) System in the FS section of the specifications. Provide a clear description of how the system will operate and interact with other systems such as the fire alarm system. Include a riser diagram on the drawings showing principal components and interconnections with other systems. Include FS system components on drawing legend. All components shown on floor plans shall be designated as FS system components (as opposed to Fire Alarm components). Show the location of FS control panels, HVAC control devices, sensors, and 120V power panel connections on the floor plans. Indicate zoning of areas by numbers (1, 2, 3) and detectors subzoned for cross zoning by letter designations (A and B). Differentiate between ceiling mounted and underfloor detectors with distinct symbols and indicate subzone of each.

11.2.8.4 Show location of telephone outlets (including pay phones) on the plans. Include legend and symbol definition to indicate height above finished floor. Show Telephone Conduit System Riser Diagram. Size conduit on Riser Diagram. Do not show conduit runs between backboard and outlets on the floor plans. Underground telephone distribution conduit shall be shown on either the electrical or electronic site plan.

11.2.8.5 Grounding System. The specifications and drawings shall completely reflect all of the design requirements. The specifications shall require field tests (in the construction phase), witnessed by the Contracting Officer, to determine the effectiveness of the grounding system. The design shall include drawings showing existing construction. Verification of the validity of any existing drawings and/or any other data furnished by the Government shall be the responsibility of the engineering services firm.

11.2.8.6 Provide a statement describing the extent of any exterior work such as telephone lines, cable television (TV) distribution cables, duct banks, etc., outside of 5 feet from the building line.

11.2.8.7 Provide the name of the licensed corrosion engineer or NACE specialist. Provide the following for cathodic protection systems:

Clearly define areas of structures or components in soil or water to be protected.  
Type system recommended, comparison of systems, cost estimates showing all equipment alternatives.

Calculations on all systems that are considered showing all information and descriptions.

11.2.8.7.1 Design of Cathodic Protection. The design shall clearly provide a thorough and comprehensive specification and drawing. The design plans and specifications shall show extent of the facilities to be protected, location and type of anodes, location of test points, details for sectionalizing an underground piping system. This design shall be complete enough to purchase equipment and build without design changes to meet criteria of protection.

11.2.8.8 Exterior work to be shown on electrical site plan.

Existing and new communications service lines, both overhead and underground, shall be properly identified.

Show removals and relocations, if any.

11.2.8.9 Provide a descriptive narrative of all electronic systems that are required for project. Define any hazardous areas (as defined in the National Electric Code) and indicate the type of equipment proposed for use in such areas. Show the location of all electronic system panels, etc., on the floor plans. Show the proposed riser diagrams for all systems. Sizes of all conduit, wires, cables, panels, etc. Provide a complete symbol legend for all devices or equipment shown on the plans. For work requiring removals or demolition, the designer shall show by use of drawings or narrative, how demolition work is to be done.

11.2.9 Electrical and Mechanical Systems: Provide all information as required on the 100% design

submittal developed to 50% completion.

11.2.10 Specifications: Draft of specifications for housing units, including index and trade sections.

11.3 The 100% design submittal shall contain, as a minimum, the following items for all submittals:

11.3.1 General: A complete set of construction documents plans and specifications at the same level of detail as if the project were to be bid including a complete list of equipment, fixtures and materials to be used. The final drawings are an extension of the reviewed 50% drawings and are to include the 50% comments and responses. All details shall be shown on the drawings.

11.3.2 The design analysis is an extension of the reviewed 50% design analysis and supports and verifies that the design complies with the requirements of the project.

11.3.3 Submit marked-up specifications. The specifications shall be coordinated with the drawings and describe in detail all items shown on the drawings.

11.3.4 Landscape, Planting and Turfing Final design drawing(s) shall include a complete schedule of plant materials which indicates their botanical and common names, plan symbols, quantities, sizes, condition furnished, and pertinent remarks. Scale of drawing shall be prepared at 1" = 30'. Drawing shall correspond with the site layout and grading plans and reference coordinates, north arrows, graphic scales and appropriate legends. An overall planting layout shall be developed and shall include enlarged detail plans of specific areas as needed, to clarify requirements. Final design drawings, indicating proposed plants by a (+) mark for the plant location and a circle which is scaled at approximately 2/3 the ultimate growth spread (diameter) of plants, shall also include a complete schedule of plant materials which indicates botanical and common names, plan symbols, quantities, sizes, condition furnished, and pertinent remarks. Final drawings shall also include the basic details for installation of tree, shrub, and ground cover planting, as well as any other applicable details for clarification of specific project requirements.

11.3.5 Architectural

11.3.5.1 All architectural drawings shall be coordinated with the other engineering disciplines. Ensure that the plans are in compliance with the applicable codes. It will be the Contractor's responsibility to implement the comments generated from any design review submittal as well as verify the consistency between plans and specification. The evaluation of the Contractor's submittals shall be based on degree to which the submittal meet the requirements set forth in this document and the specifications.

11.3.5.2 Prewired workstation composite floor plans. Prewired workstation typicals - elevations and component inventory. Prewired workstation panel identification plan with electrical outlet placement including base feed.

11.3.5.3 SID package.

11.3.5.4 Fire Protection and Life Safety Analysis. This analysis must be performed by a Registered Fire Protection Engineer (FPE). NICET certification is not sufficient to address this requirement.

11.3.6 Structural Design

11.3.6.1 Furnish complete checked calculations for all structural members. Incorporate any changes required by comments on 50% Design Submittal.

11.3.6.2 Prior to this submittal, structural drawings shall be coordinated with all other design disciplines.

11.3.6.3 The final structural drawings shall contain the following information as a set of general notes:

The allowable soil bearing value.  
The design stresses of structural materials used.  
The design live loads used in the design of various portions of the structures.  
The design wind speed.  
The seismic zone and the "K", "C", "I" and "Z" values used in design.

11.3.6.4 All structural drawings and calculations shall be checked and stamped by the designer of record (a registered Professional Engineer).

[11.3.7 Fire Suppression System: Provide a file of the input data used in the computer program to design the fire suppression system as well as the output data.]

#### 11.3.8 Specific Mechanical and Plumbing Requirements:

##### 11.3.8.1 Required Plans, Diagrams, Schedules and Details on Unit Mechanical Drawings:

11.3.8.1.1. Mechanical Floor Plan: The floor plans shall show all principle architectural features of the building which will affect the mechanical design. The floor plans shall also show the following:

Room designations.  
Mechanical legend and applicable notes.  
Location of all ductwork or piping (double line ductwork required).  
Location and capacity of all terminal units (i.e., registers, diffusers, grilles, hydronic baseboards).  
Exhaust fan and range hood location.  
Size of all ductwork and piping.  
Thermostat location.  
Location of heating/cooling plant (i.e., boiler, chiller, cooling tower, etc).  
Location of all air handling equipment.  
Return air paths (i.e., undercut doors, transfer grilles).  
Flue piping size and location.  
Piping diagram for forced hot water system (if used).  
Fuel supply and return piping

11.3.8.1.2. Equipment Schedule: Complete equipment Schedules shall be provided. Schedule shall also include:

Capacity  
Electrical characteristics  
Efficiency (if applicable)  
Manufacturer's name  
Optional features to be provided  
Physical size

11.3.8.1.3 Details: Construction details, sections, elevations, etc., shall be provided where required for clarification of methods and materials of design. Roof and exterior wall penetrations shall be detailed on the drawings.

11.3.8.2 Plumbing Floor Plan: The floor plan shall show all principal architectural features of the building which will affect the plumbing design. Separate plumbing plans will not be required if sufficient information can be shown on the mechanical plans to meet the requirements shown above. The floor plan shall also show the following:

Room designations.  
Fixture Schedule.  
Location of utility entrances.

Waste and water pipe location and size.  
Fixture designations.

11.3.8.3 Design Analysis: Complete design calculations for mechanical systems. Include computations for sizing PM&E equipment, air duct design, and U-factors for ceilings, roofs and exterior walls and floors. Contractor shall employ commercially available energy analysis techniques to determine the energy performance of all passive systems and features. Use of hourly energy load computer simulation (e.g., TRNSYS, DOE 2.1 Blast, etc.) is required. These calculations can be used to size the mechanical systems. Based on the results of calculations, provide a complete list of the materials and equipment proposed for heating and plumbing, with the manufacturer's published cataloged product installation specifications and roughing-in data. The heating and cooling equipment data shall include the manufacturer's wiring diagrams, installation specifications, ARI certification, and the standard warranty for the equipment.

#### 11.3.9 Specific Electrical Requirements:

##### 11.3.9.1 Required Plans, Diagrams, Schedules, and Details on Unit Electrical Drawings:

11.3.9.1.1. Electrical Floor Plan. The floor plans shall show all principle architectural features of the building which will affect the electrical design. The floor plan shall also show the following:

- Room designations.
- Electrical legend and applicable notes.
- Lighting fixtures, properly identified.
- Location of smoke and CO detectors.
- Location of telephone and cable TV outlets.
- Switches for control of lighting.
- Receptacles.
- Location and designation of panelboards. Plans should clearly indicate type of mounting required (flush or surface) and be reflected accordingly in specifications. Service entrance (conduit and main disconnect).
- Location, designation and rating of motors and/or equipment which requires electrical service. Show method of termination and/or connection to motors and/or equipment. Show necessary junction boxes, disconnects, controllers (approximate only), conduit stubs, and receptacles required to serve the motor and/or equipment.

11.3.9.1.2. Building Riser Diagram (from pad-mounted transformer to unit load center panelboard): Indicate the types and sizes of electrical equipment and wiring. Include grounding and metering requirements.

11.3.9.1.3. Load Center Panelboard Schedule(s): Schedule shall indicate the following information:

- Panelboard Characteristics (Panel Designation, Voltage, Phase, Wires, Main Breaker Rating and Mounting).
- Branch Circuit Designations.
- Load Designations.
- Circuit Breaker Characteristics. (Number of Poles, Trip Rating, AIC Rating)
- Branch Circuit Connected Loads (AMPS).
- Special Features.

11.3.9.1.4 Lighting Fixture Schedule: (Schedule shall indicate the following information:)

- Fixture Designation.
- General Fixture Description.
- Number and Type of Lamp(s).
- Type of Mounting.

**Special Features.**

11.3.9.1.5. Details: Construction details, sections, elevations, etc., shall be provided where required for clarification of methods and materials of design.

11.3.9.2. Required Electrical Design Analysis: Design analysis and calculations for the electrical systems shall be prepared by a licensed professional engineer with experience in family housing, and shall be stamped as such. The design analysis shall be separately bound, in one or more volumes. Show functional and engineering criteria, design information, and calculations applicable to the project. The analysis shall be organized in a format appropriate for review, approval, and record purposes. The design calculations shall indicate methods and references identified, and shall explain assumptions and conclusions.

11.3.9.2.1. Voltage Drop (VD) Calculations: Select conductor sizes of primary feeders, site lighting circuits, service laterals, and unit feeder conductors. Calculate maximum length for each phase of each primary circuit, using a maximum allowable VD for each circuit. Calculate voltage drops for each conductor. Maximum allowable voltage drop for site lighting and service laterals is 3%. The combined voltage drop for the service laterals, unit feeders, and branch circuit cannot exceed 5%. Calculate the available fault current at the main breaker for the living unit panel. Provide a coordination study to support breaker selection.

11.3.10 Specifications: Provide final specifications. The Contractor shall make final identification of all materials and finishes at this stage.

**11.4 Design complete submittal:**

11.4.1 Design Drawings: Drawings shall be 100% complete, signed and sealed by the designer of record. All previous review comments shall be incorporated.

11.4.2 Design Analysis: Complete design analysis for all design disciplines. The final Fire Protection and Life Safety Analysis shall be included in the Design Analysis.

11.4.3 Comment Response Package: Complete package showing all comments from all previous reviews and the respective response and disposition.

11.4.4 This submittal shall include all drawings and design information from the 100% site/utility submittal to form a complete design package.

**12.0 DESIGN RELATED PRODUCTS**

12.1 Architectural Renderings: Contractor shall provide the original and three copies of each ground level perspective artist's renderings of completed typical facilities with walks, parking, and landscaping. Renderings shall be no smaller than 14" x 18" or larger than 28" x 36", multi-colored, and shall be suitably titled, matted, and framed.

12.2 DD Form 1354: Three (3) sets of DD Form 1354, Transfer and Acceptance of Military Real Property shall be prepared in accordance with ER 415-345-38 and submitted to the Contracting Officer. Copies of Form 1354 and ER 415-345-38 will be furnished to the successful contractor following award of the project.

12.3 Submittal Register, ENG FORM 4288: The Contractor shall complete and submit three (03) copies of a "preliminary" Eng Form 4288, Submittal Register to Contracting Officer. The "preliminary" Eng Form 4288, Submittal Register shall have the column "Submittal Identification", "Specification Paragraph Number", "Description of Submittal", "Type of Submittal", and "Remarks" completed; the Contractor shall identify whether the submittal is for "Government Approval" or for "Government Information" under the column "Remarks." The "final" Eng Form 4288, Submittal Register, shall be in

accordance with clause CONTRACTOR SUBMITTALS AND SUBMITTAL CONTROL in this section.

12.4 Reproduction: Upon Government approval of 100% design documents, the original will be returned to the Contractor for reproduction purposes. The Contractor will be responsible for his own reproduction as well as reproduction for Government use. The Government will require twice the number of copies of the plans and specifications as were required for the review stages, no color boards will be required. The originals will be retained by the Contractor for recording of as-built conditions. Upon completion of the project, the original design documents corrected to reflect as-built conditions will be supplied to the Government.

**SECTION 01320  
PROJECT SCHEDULE  
DESIGN-BUILD CONSTRUCTION**

*[Design Districts shall review and edit this specification as necessary to suit the project.]*

**1. GENERAL**

**1.1 SUBMITTALS**

Government approval is required for submittals with a "GA" designation; submittals having an "FIO" designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

**SD-07 Schedules**

Initial Project Schedule; GA;

Preliminary Project Schedule; GA;

Periodic Schedule Updates; GA;

[Three][ ] copies of the schedules showing codes, values, categories, numbers, items, etc., as required.

**SD-08 Statements**

Qualifications; FIO;

Documentation showing qualifications of personnel preparing schedule reports.

**SD-09 Reports**

Narrative Report; FIO;

Schedule Reports; FIO;

[Three] [ ] copies of the reports showing numbers, descriptions, dates, float, starts, finishes, durations, sequences, etc., as required.

**1.2 QUALIFICATIONS**

The Contractor shall designate an authorized representative who shall be responsible for the preparation of all required project schedule reports. This person shall have previously created and reviewed computerized schedules. Qualifications of this individual shall be submitted to the Contracting Officer's Representative for review with the Preliminary Project Schedule submission.

**2. PRODUCTS (Not Applicable)**

**3. EXECUTION**

**3.1 GENERAL**

Pursuant to the Contract Clause, SCHEDULE FOR CONSTRUCTION CONTRACTS a Project Schedule as described below shall be prepared. The Contractor shall be responsible for scheduling of all design, procurement and construction activities. Contractor management personnel shall actively participate in its development. Designers, subcontractors and suppliers working on the project should also contribute in developing and maintaining an accurate Project Schedule. The approved Project Schedule shall be used to measure the progress of the work, to aid in evaluating time extensions, and to provide the basis of all progress payments.

### **3.2 BASIS FOR PAYMENT**

The schedule shall be the basis for measuring Contractor progress. Lack of an approved schedule or scheduling personnel shall result in an inability of the Contracting Officer's Representative to evaluate Contractor progress for the purposes of payment. Failure of the Contractor to provide all information, as specified below, shall result in the disapproval of the entire Project Schedule submission and the inability of the Contracting Officer's Representative to evaluate Contractor progress for payment purposes. In the case where Project Schedule revisions have been directed by the Contracting Officer's Representative and those revisions have not been included in the Project Schedule, then the Contracting Officer's Representative may hold retainage up to the maximum allowed by contract, each payment period, until revisions to the Project Schedule have been made.

### **3.3 PROJECT SCHEDULE**

The computer software system utilized by the Contractor to produce the Project Schedule shall be capable of providing all requirements of this specification. Failure of the Contractor to meet the requirements of this specification shall result in the disapproval of the schedule. Manual methods used to produce any required information shall require approval by the Contracting Officer's Representative.

#### **3.3.1 Use of the Critical Path Method**

The Critical Path Method (CPM) of network calculation shall be used to generate the Project Schedule. The Contractor shall provide the Project Schedule in either the Precedence Diagram Method (PDM) or the Arrow Diagram Method (ADM).

#### **3.3.2 Level of Detail Required**

With the exception of the initial and preliminary schedule submission, the Project Schedule shall include an appropriate level of detail. Failure to develop or update the Project Schedule or provide data to the Contracting Officer's Representative at the appropriate level of detail, as specified by the Contracting Officer's Representative, shall result in the disapproval of the schedule. The Contracting Officer's Representative will use, but is not limited to, the following conditions to determine the appropriate level of detail to be used in the Project Schedule.

##### **3.3.2.1 Activity Durations**

Contractor submissions shall be required to follow the direction of the Contracting Officer's Representative regarding reasonable activity durations. Reasonable durations are those that allow the progress of activities to be accurately determined between payment periods. A rule of thumb, that the Contractor should use, is that less than 2 percent of all non-procurement activities' Original Durations shall be greater than 20 days.

##### **3.3.2.2 Design and Permit Activities**

The Contractor shall integrate design and permitting activities, including necessary conferences and follow-up actions and design package submission dates into the schedule.



**3.3.2.3 Procurement Activities**

Tasks related to the procurement of long lead materials or equipment shall be included as separate activities in the project schedule. Long lead materials and equipment are those materials that have a procurement cycle of over 90 days. Examples of procurement process activities include, but are not limited to: submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing.

**3.3.2.4 Government Activities**

Government and other agencies activities that could impact progress shall be shown. These activities include, but are not limited to: design reviews, submittal reviews, environmental permit approvals by State regulators, inspections, utility tie-in, Government Furnished Equipment (GFE) and notice to proceed for phasing requirements.

**3.3.2.5 Workers Per Day**

All activities shall have an estimate of the average number of workers per day that are expected to be used during the execution of the activity. If no workers are required for an activity, in the case of activities related to procurement, for example, then the activity shall be identified as using zero workers per day. The workers per day information for each activity shall be identified by the Workers Per Day Code.

**3.3.2.6 Responsibility**

All activities shall be identified in the project schedule by the party responsible to perform the work. Responsibility includes, but is not limited to, the subcontracting firm, contractor work force, or government agency performing a given task. Activities shall not belong to more than one responsible party. The responsible party for each activity shall be identified by the Responsibility Code.

**3.3.2.7 Work Areas**

All activities shall be identified in the project schedule by the work area in which the activity occurs. Activities shall not be allowed to cover more than one work area. The work area of each activity shall be identified by the Work Area Code.

**3.3.2.8 Modification or Claim Number**

Any activity that is added or changed by contract modification or used to justify claimed time shall be identified by a mod or claim code that changed the activity. Activities shall not belong to more than one modification or claim item. The modification or claim number of each activity shall be identified by the Mod or Claim Number.

**3.3.2.9 Bid Item**

All activities shall be identified in the project schedule by the Bid Item to which the activity belongs. An activity shall not contain work in more than one bid item. The bid item for each appropriate activity shall be identified by the Bid Item Code.

**3.3.2.10 Phase of Work**

All activities shall be identified in the project schedule by the phases of work in which the activity occurs. Activities shall not be allowed to contain work in more than one phase of work. The project phase of each activity shall be by the unique Phase of Work Code.

**3.3.2.11 Category of Work**

All Activities shall be identified in the project schedule according to the category of work which best describes the activity. Category of work refers, but is not limited to, the procurement chain of activities including such items as submittals, approvals, procurement, fabrication, delivery, installation, start-up, and testing. The category of work for each activity shall be identified by the Category of Work Code.

### **3.3.2.12 Feature of Work**

All activities shall be identified in the project schedule according to the feature of work to which the activity belongs. Feature of work refers, but is not limited to a work breakdown structure for the project. The feature of work for each activity shall be identified by the Feature of Work Code.

### **3.3.3 Scheduled Project Completion**

The schedule interval shall extend from notice-to-proceed to the contract completion date.

#### **3.3.3.1 Project Start Date**

The schedule shall start no earlier than the date that the Notice to Proceed (NTP) was acknowledged. The Contractor shall include as the first activity in the project schedule an activity called "Start Project". The "Start Project" activity shall have: a "ES" constraint, a constraint date equal to the date that the NTP was acknowledged, and a zero day duration.

#### **3.3.3.2 Constraint of Last Activity**

Completion of the last activity in the schedule shall be constrained by the contract completion date. Calculation on project updates shall be such that if the early finish of the last activity falls after the contract completion date, then the float calculation shall reflect a negative float on the critical path. The Contractor shall include as the last activity in the project schedule an activity call "End Project". The "End Project" activity shall have: a "LF" constraint, a constraint date equal to the completion date for the project, and a zero day duration.

#### **3.3.3.3 Early Project Completion**

In the event the project schedule shows completion, the project prior to the contract completion date, the Contractor shall identify those activities that have been accelerated and/or those activities that are scheduled in parallel to support the Contractor's "early" completion. Contractor shall specifically address each of the activities noted at every project schedule update period to assist the Contracting Officer's Representative to evaluate the Contractor's ability to actually complete prior to the contract period.

### **3.3.4 Interim Completion Dates**

Contractually specified interim completion dates shall also be constrained to show negative float if the early finish date of the last activity in that phase falls after the interim completion date.

#### **3.3.4.1 Start Phase**

The Contractor shall include as the first activity for a project phase an activity called "Start Phase X" where "X" refers to the phase of work. The "Start Phase X" activity shall have: a "ES" constraint, a constraint date equal to the date that the NTP was acknowledged, and a zero day duration.

#### **3.3.4.2 End Phase**

The Contractor shall include as the last activity in a project phase an activity called "End Phase X" where "X" refers to the phase of work. The "End Phase X" activity shall have: a "LF" constraint, a constraint date equal to the completion date for the project, and a zero day duration.

**3.3.4.3 Phase X**

The Contractor shall include a hammock type activity for each project phase called "Phase X" where "X:" refers to the phase of work. The "Phase X" activity shall be logically tied to the earliest and latest activities in the phase.

**3.3.5 Default Progress Data Disallowed**

Actual Start and Finish dates shall not be automatically updated by default mechanisms that may be included in CPM scheduling software systems. Actual Start and Finish dates on the CPM schedule shall match those dates provided from Contractor Quality Control Reports. Failure of the Contractor to document the Actual Start and Finish dates on the Daily Quality Control report for every in progress or completed activity and insure that the data contained on the Daily Quality Control reports is the sole basis for schedule updating shall result in the disapproval of the Contractor's schedule and the inability of the Contracting Officer's Representative to evaluate Contractor progress for payment purposes.

**3.3.6 Out-of-Sequence Progress**

Activities that have posted progress without predecessors being completed (Out-of-Sequence Progress) shall be allowed only by the case-by-case approval of the Contracting Officer's Representative. The Contracting Officer's Representative may direct that changes in schedule logic be made to correct any or all out-of-sequence work.

**3.3.7 Extended Non-Work Periods**

Designation of Holidays to account for non-work periods of over [5] [ ] days shall not be allowed. Non-work periods of over [5] [ ] days shall be identified by addition of activities that represent the delays. Modifications to the logic of the project schedule shall be made to link those activities that may have been impacted by the delays to the newly added delay activities.

**3.3.8 Negative Lags**

Lag durations contained in the project schedule shall not have a negative value.

**3.4 PROJECT SCHEDULE SUBMISSIONS**

The Contractor shall provide the submissions as described below. The data disk, reports, and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS.

**3.4.1 Preliminary Project Schedule Submission**

The Preliminary Project Schedule, defining the Contractor's planned operations for the first [60] [ ] calendar days shall be submitted for approval within [20] [ ] calendar days after Notice to Proceed is acknowledged. The approved preliminary schedule shall be used for payment purposes not to exceed [60] [ ] calendar days after Notice to Proceed.

**3.4.2 Initial Project Schedule Submission**

The Initial Project Schedule shall be submitted for approval within [40] [ ] calendar days after Notice to Proceed. The schedule shall provide a reasonable sequence of activities which represent work through the entire project and shall be at a reasonable level of detail.

**3.4.3 Periodic Schedule Updates**

Based on the result of progress meetings, specified in "Periodic Progress Meetings," the Contractor shall submit periodic schedule updates. These submissions shall enable the Contracting Officer's

Representative or to assess Contractor's progress. If the Contractor fails or refuses to furnish the information and project schedule data, which in the judgement of the Contracting Officer's Representative or authorized representative, is necessary for verifying the contractor's progress, the Contractor shall be deemed not to have provided an estimate upon which progress payment may be made.

#### **3.4.4 Standard Activity Coding Dictionary**

The Contractor shall submit, with the Initial Project Schedule, a coding scheme that shall be used throughout the project for all activity codes contained in the schedule. The coding scheme submitted shall list the values for each activity code category and translate those values into project specific designations. For example, a Responsibility Code Value, "ELE", may be identified as "Electrical Subcontractor." Activity code values shall represent the same information throughout the duration of the contract. Once approved with the Initial Project Schedule submission, changes to the activity coding scheme must be approved by the Contracting Officer's Representative.

### **3.5 SUBMISSION REQUIREMENTS**

The following items shall be submitted by the Contractor for the initial submission, and every periodic project schedule update throughout the life of the project:

#### **3.5.1 Data Disks**

[Three] [ ] data disks containing the project schedule shall be provided. Data on the disks shall be in the format specified in [ ].

##### **3.5.1.1 File Medium**

Required data shall be submitted on [3.5] [ ] disks, formatted to hold [1.44 MB] [ ] of data, under the [WINDOWS] [ ] operating system or on a WINDOWS formatted CD-ROM disk.

##### **3.5.1.2 Disk Label**

A permanent exterior label shall be affixed to each disk submitted. The label shall indicate the type of schedule (Initial, Update, or Change), full contract number, project name, project location, data date, name and telephone number or person responsible for the schedule, and the software version format of the disk.

##### **3.5.1.3 File Name**

Each file submitted shall have a name related to either the schedule data date, project name, or contract number. The Contractor shall develop a naming convention that will insure that the names of the files submitted are unique. The Contractor shall submit the file naming convention to the Contracting Officer's Representative for approval.

#### **3.5.2 Narrative Report**

A Narrative Report shall be provided with each update of the project schedule. This report shall be provided as the basis of the Contractor's progress payment request. The Narrative Report shall include: a description of activities along the [4] [ ] most critical paths, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken.

#### **3.5.3 Approved Changes Verification**

Only project schedule changes that have been previously approved by the Contracting Officer's Representative shall be included in the schedule submission. The Narrative Report shall specifically reference, on an activity by activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes.

### **3.5.4 Schedule Reports**

Format for each activity for the schedule reports listed below shall contain: Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date, Total Float. Actual Start and Actual Finish Dates shall be printed for those activities in-progress or completed.

#### **3.5.4.1 Activity Report**

A list of all activities sorted according to [activity number] [or] ["I-NODE" AND "J-NODE"] and then sorted according to Early Start Date. For completed activities the Actual Start Date shall be used as the secondary sort.

#### **3.5.4.2 Logic Report**

A list of Preceding and Succeeding activities for every activity in ascending order by activity number and then sorted according to Early Start Date. For completed activities the Actual Start Date shall be used as the secondary sort.

#### **3.5.4.3 Total Float Report**

A list of all activities sorted in ascending order of total float. Activities which have the same amount of total float shall be listed in ascending order of Early Start Dates.

#### **3.5.4.4 Earnings Report**

A compilation of the Contractor's Total Earnings on the project from the Notice to Proceed until the most recent Monthly Progress Meeting. This report shall reflect the Earnings of specific activities based on the agreements made in the field and approved between the Contractor and Contracting Officer's Representative at the most recent Monthly Progress Meeting. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining Contractor Payment. Activities shall be grouped by bid item and sorted by activity numbers. This report shall: sum all activities in a bid item and provide a bid item percent; complete and sum all bid items to provide a total project percent complete. The printed report shall contain, for each activity: [Activity Number] [or] ["i-node" and "j-node"], Activity Description, Original Budgeted Amount, Total Quantity, Quantity to Date, Percent Complete (based on cost), Earnings to Date.

### **3.5.5 Network Diagram**

The network diagram shall be required on the initial schedule submission [and on [monthly] [or] [quarterly] schedule update submissions] [\_\_\_\_]. The network diagram shall depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer's Representative will use, but is not limited to, the following conditions to review compliance with this paragraph:

#### **3.5.5.1 Continuous Flow**

Diagrams shall show a continuous flow from left to right with no arrows from right to left. The activity or event number, description, duration, and estimated earned value shall be shown on the diagram.

#### **3.5.5.2 Project Milestone Dates**

Dates shall be shown on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

**3.5.5.3 Critical Path**

The critical path shall be clearly shown.

**3.5.5.4 Banding**

Activities shall be grouped to assist in the understanding of the activity sequence. Typically, this flow will group activities by category of work, work area and/or responsibility.

**3.5.5.5 S-Curves**

Earnings curves showing projected early and late earnings and earnings to date.

**3.6 PERIODIC PROGRESS MEETINGS**

Progress meetings to discuss payment shall include a monthly on-site meeting or other regular intervals mutually agreed to at the preconstruction conference. During this meeting the Contractor will describe, on an activity by activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer's Representative will approve activity progress, proposed revisions, and adjustments as appropriate.

**3.6.1 Meeting Attendance**

The Contractor's Project Manager and Scheduler shall attend the regular progress meeting.

**3.6.2 Update Submission Following Progress Meeting**

A complete update of the project schedule containing all approved progress, revisions, and adjustments, based on the regular progress meeting, shall be submitted not later than 4 working days after the monthly progress meeting.

**3.6.3 Progress Meeting Contents**

Update information, including Actual Start Dates, Actual Finish Dates, Remaining Durations, and Cost to Date shall be subject to the approval of the Contracting Officer's Representative. The following minimum set of items which the Contractor shall address, on an activity by activity basis, during each progress meeting.

**3.6.3.1 Start and Finish Dates**

The Actual Start and Actual Finish dates for each activity currently in-progress or completed activities.

**3.6.3.2 Time Completion**

The estimated Remaining Duration for each activity in-progress. Time-based progress calculations must be based on Remaining Duration for each activity.

**3.6.3.3 Cost Completion**

The earnings for each activity started. Payment shall be based on earnings for each in-progress or completed activity. Payment for individual activities shall not be made for work that contains quality defects. A portion of the overall project amount may be retained based on delays of activities.

**3.6.3.4 Logic Changes**

All logic changes pertaining to Notice to Proceed on change orders, change orders to be incorporated into

the schedule, contractor proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress, [lag durations,] and other changes that have been made pursuant to contract provisions shall be specifically identified and discussed.

#### **3.6.3.5 Other Changes**

Other changes required due to delays in completion of any activity or group of activities are those delays beyond the Contractors control such as strikes and unusual weather. Also included are delays encountered due to submittals, Government Activities, deliveries or work stoppage which makes re-planning the work necessary, and when the schedule does not represent the actual prosecution and progress of the work.

### **3.7 REQUESTS FOR TIME EXTENSIONS**

In the event the Contractor requests an extension of the contract completion date, he shall furnish such justification, project schedule data and supporting evidence as the Contracting Officer's Representative may deem necessary for a determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract. Submission of proof of delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is obligatory to any approvals.

#### **3.7.1 Justification of Delay**

The project schedule must clearly display that the Contractor has used, in full, all the float time available for the work involved with this request. The Contracting Officer's Representative's determination as to the number of allowable days of contract extension, shall be based upon the project schedule updates in effect for the time period in question and other factual information. Actual delays that are found to be caused by the Contractor's own actions, which result in the extension of the schedule, shall not be a cause for a time extension to the contract completion date.

#### **3.7.2 Submission Requirements**

The Contractor shall submit a justification for each request for a change in the contract completion date of under two weeks based upon the most recent schedule update at the time of the Notice to Proceed or constructive direction issued for the change. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

- a. A list of affected activities, with their associated project schedule activity number.
- b. A brief explanation of the causes of the change.
- c. An analysis of the overall impact of the changes proposed.
- d. A sub-network of the affected area.

Activities impacted in each justification for change shall be identified by a unique activity code contained in the required data file.

#### **3.7.3 Additional Submission Requirements**

For any request for time extension for over 2 weeks, the Contracting Officer's Representative may request an interim update with revised activities for a specific change request. The Contractor shall provide this disk within 4 days of the Contracting Officer's Representative's request.

### **3.8 DIRECTED CHANGES**

If Notice to Proceed (NTP) is issued for changes prior to settlement of price and/or time, the Contractor shall submit proposed schedule revisions to the Contracting Officer's Representative within 2 weeks of the NTP being issued. The proposed revisions to the schedule will be approved by the

Contracting Officer's Representative prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer's Representative may furnish the Contractor suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until the Contractor submits revisions, and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions furnished by the Contracting Officer's Representative, then the Contractor shall advise the Contracting Officer's Representative within 2 weeks of receipt of the revisions. Regardless of the objections, the Contractor will continue to update their schedule with the Contracting Officer's Representative's revisions until a mutual agreement in the revisions may be made. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's Representative's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's Representative's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

### **3.9 OWNERSHIP OF FLOAT**

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.



**SECTION 01330  
SUBMITTAL PROCEDURES  
(DESIGN/BUILD)  
10/2000**

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**NOTE:** This guide specification covers procedures to be used in making submittals called for in other sections of the specifications. This guide specification is to be used in the preparation of project specifications in accordance with ER 1110-1-8155. This specification has been edited to include provisions which are applicable only to design build projects and procedures.

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**PART 1 GENERAL**

**1.1 SUBMITTAL IDENTIFICATION**

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**NOTE:** Submittal categories (SD numbers and titles) listed in this paragraph are those that are included in the SPECSINTACT software. Submittal registers for projects using any or all of these submittal categories can be generated using the SPECSINTACT software. The Resident Management System (RMS) software can produce a submittal register using the SPECSINTACT submittal categories or additional categories as may be required.

Submittal categories are for convenience in identifying submittals required, and the titles used are reasonably self-explanatory. Detailed category definitions are not necessary for the designer or the Contractor and could conflict with requirements specified in other sections.

\*\*\*\*\*

Submittals required are identified by SD numbers and titles as follows:

SD-01 Preconstruction Submittals

SD-02 Shop Drawings

SD-03 Product Data

SD-04 Samples

SD-05 Design Data

SD-06 Test Reports

SD-07 Certificates

SD-08 Manufacturer's Instructions

SD-09 Manufacturer's Field Reports

SD-10 Operation and Maintenance Data

SD-11 Closeout Submittals

## **1.2 SUBMITTAL CLASSIFICATION**

Submittals are classified as follows:

### **1.2.1 Designer of Record Approved.**

Designer of Record approval is required for extensions of design, critical materials, any deviations from the solicitation, the accepted proposal, or the completed design, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer's Representative. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings". The Contractor shall provide the Government the number of copies designated hereinafter of all Designer of Record approved submittals. The Government may review any or all Designer of Record approved submittals for conformance to the Solicitation and Accepted Proposal. The Government will review all submittals designated as deviating from the Solicitation or Accepted Proposal, as described below.

### **1.2.2 Government Approved Construction Submittals.**

Administrative Contracting Officer approval is required for any deviations from the Solicitation or Accepted Proposal and other items as designated by the Contracting Officer's Representative. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings".

### **1.2.3 Government Reviewed Extension of Design.**

Government review is required for extension of design construction submittals, used to define contract conformity, and for deviation from the completed design. Review will be only for conformance with the contract requirements. Included are only those construction submittals for which the Designer of Record design documents do not include enough detail to ascertain contract compliance. Government review is not required for extensions of design such as structural steel or reinforcement shop drawings.

### **1.2.4 Information Only.**

All submittals not requiring Designer of Record or Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

### **1.1.5 GOVERNMENT REVIEWED OR "APPROVED" SUBMITTALS**

The Contracting Officer's Representative conformance review or approval of submittals shall not be construed as a complete check, but will indicate only that the design, general method of construction, materials, detailing and other information appear to meet the Solicitation and Accepted Proposal. Government Review or approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor, under the Design and CQC requirements of this contract, is responsible for design, dimensions, all design extensions, such as the design of adequate connections and details, etc., and the satisfactory construction of all work. After submittals have been reviewed for conformance or approved, as applicable, by the Contracting Officer's Representative, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

## **1.2 DISAPPROVED SUBMITTALS**

The Contractor shall make all corrections required by the Contracting Officer's Representative, obtain the Designer of Record's approval, when applicable, and promptly furnish a corrected submittal in the form an number of copies specified for the initial submittal. Any "information only" submittal found to contain errors or unapproved deviations from the Solicitation or Accepted Proposal shall be resubmitted as one requiring "approval" action, requiring both Design of Record and Government approval. If the Contractor considers any correction indicated by the Government on the submittals to constitute a change to the contract, it shall promptly provide a notice in accordance with the Contract Clause "Changes" to the Contracting Officer's Representative.

## **1.3 WITHHOLDING OF PAYMENT**

No payment for materials incorporated in the work will be made if all required Designer of Record or required Government approvals have not been obtained. No payment will be made for any materials incorporated into the work for any conformance review submittals or information only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

## **PART 2 PRODUCTS (Not used)**

## **PART 3 EXECUTION**

### **3.1 GENERAL**

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) System Manager and each item shall be stamped, signed, and dated by the CQC System Manager indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

#### **3.1.1 Design Submittals**

The Contractor shall provide design submittals in accordance with Section 01012 entitled "DESIGN AFTER AWARD".

### **3.2 SUBMITTAL REGISTER**

The Contractor's Designer(s) of Record shall develop a complete list of submittals during design. The Designer of Record shall identify required submittals in the specifications. Use the list to prepare ENG Form 4288 Submittal Register or a computerized equivalent. The list may not be all inclusive and additional submittals may be required by other parts of the contract. The Contractor is required to complete ENG Form 4288 (including columns "a" through "r") and submit to the Contracting Officer for approval within 30 calendar days after Notice to Proceed. The approved submittal register will serve as a scheduling document for submittals and will be used to control submittal actions throughout the contract period. The submit dates and need dates used in the submittal register shall be coordinated with dates in the Contractor prepared progress schedule. Updates to the submittal register showing the

Contractor action codes and actual dates with Government action codes and actual dates shall be submitted monthly or until all submittals have been satisfactorily completed. When the progress schedule is revised, the submittal register shall also be revised and both submitted for approval. The Contractor shall maintain a submittal register for the project in accordance with Section 01312 RESIDENT MANAGEMENT SYSTEM (RMS).

### 3.3 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of [ ] calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals. An additional [ ] calendar days shall be allowed and shown on the register for review and approval of submittals for [food service equipment] [and] [refrigeration and HVAC control systems].

### 3.4 TRANSMITTAL FORM (ENG FORM 4025)

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**NOTE: ENG Form 4025 is not a part of this guide specification; the sample ENG Form 4025 must be added to this section locally. If the Contractor is required to use the RMS-QC software for the contract, that system included an electronic version of ENG Form 4025.**

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The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms are included in the RMS-QC software that the Contractor is required to use for this contract. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

### 3.5 SUBMITTAL PROCEDURE

Submittals shall be made as follows:

#### 3.5.1 Procedures

The Government will further discuss and detail the required submittal procedures at the Pre-Construction Conference.

#### 3.5.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. As stated above, the Contractor's Designer of Record approval is required for any proposed deviations. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

### 3.6 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

**3.7 GOVERNMENT CONFORMANCE REVIEW AND APPROVED SUBMITTALS**

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. [ ] copies of the submittal will be retained by the Contracting Officer and [ ] copies of the submittal will be returned to the Contractor. If the Government performs a conformance review of other Designer of Record approved submittals, the submittals will be so identified and returned, as described above.

**3.8 INFORMATION ONLY SUBMITTALS**

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

**3.9 STAMPS**

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

CONTRACTOR (Firm Name)	
_____	Approved
_____	Approved with corrections as noted on the submittal data and/or attached sheets.
SIGNATURE: _____	
TITLE: <u>(DESIGNER OF RECORD)</u>	
DATE: _____	

**SECTION 01451****CONTRACTOR QUALITY CONTROL  
(DESIGN-BUILD)**

*[Design Districts shall review and edit this specification as necessary to suit the project.]*

**PART 1 - GENERAL****1.1 REFERENCES**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

**AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)**

ASTM D 3740	(1996) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM E 329	(1995b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

**1.2 PAYMENT**

No separate payment will be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

**PART 2 - PRODUCTS (Not Applicable)****PART 3 - EXECUTION****3.1 GENERAL**

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all design and construction operations, both onsite and offsite, and shall be keyed to the proposed design and construction sequence. The project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with quality requirements specified in the contract. The project superintendent in this context shall mean the individual with the responsibility for the overall management of the project including quality and production.

**3.2 QUALITY CONTROL PLAN****3.2.1 General**

The Contractor shall furnish for review by the Government, not later than 10 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control,

instructions, test, records, and forms to be used. The Government will consider an interim plan for the first 60 days of operation. Design and Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

### 3.2.2 Content of the CQC Plan

The CQC plan shall include, as a minimum, the following to cover all design and construction operations, both onsite and offsite, including work by subcontractors, designers of record, consultants, architect/engineer's (A/E's), fabricators, suppliers, and purchasing agents:

- a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project manager or someone higher in the Contractor's organization. Project manager in this context shall mean the individual with responsibility for the overall management of the project including quality and production.
- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters will also be furnished to the Government.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, designers of record, consultants, A/E's, off-site fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 - SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (The Contracting Officer must approve Laboratory facilities.)
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures will establish verification that identified deficiencies have been corrected.
- h. Reporting procedures, including proposed reporting formats. The Contractor shall utilize a Government-furnished software program titled "RMS" (Resident Management System). See paragraph, IMPLEMENTATION OF GOVERNMENT RESIDENT MANAGEMENT SYSTEM FOR CONTRACTOR QUALITY CONTROL OF CONTRACT, of this section for additional details.
- h. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.
- i. A list of tests to be performed shall be furnished as a part of the CQC Plan. The list shall give the test name, frequency, specification paragraph containing the test requirement, the personnel and laboratory

responsible for each type of test, and an estimate of the number of tests required.

j. RMS will assist in tracking and reporting for the above requirements. Sample forms generated from the software package shall be used as part of the CQC Plan.

k. Design Quality Control (DQC) Plan

The Contractor's DQC Plan shall provide and maintain an effective quality control program which will assure that all services required by this design-build contract are performed and provided in a manner that meets professional architectural and engineering quality standards. As a minimum, all documents shall be technically reviewed by competent, independent reviewers identified in the DQC Plan. The same element that produced the product shall not perform the independent technical review (ITR). In addition, the DQC Plan shall incorporate the Lessons Learned Databases provided by the Government. The Contractor shall correct errors and deficiencies in the design documents prior to submitting them to the Government.

The Contractor shall include the design schedule in the master project schedule, showing the sequence of events involved in carrying out the project tasks within the specific contract period. This should be at a detailed level of scheduling sufficient to identify all major tasks including those that control the flow of work. The schedule shall include review and correction periods associated with each item. This should be a forward planning as well as a project monitoring tool. The schedule reflects calendar days and not dates for each activity. If the schedule is changed, the Contractor shall submit a revised schedule reflecting the change within seven calendar days. The Contractor shall include in the DQC Plan the discipline-specific checklists to be used during the design and quality control of each submittal. These completed checklists shall be submitted at each design phase as part of the project documentation. Example checklists can be found in ER 1110-1-12.

The DQC Plan shall be implemented by an assigned person with the Contractor's organization who has the responsibility of being present during the times work is in progress, and shall be cognizant of and assure that all documents on the project have been coordinated. This individual shall be a person who has verifiable engineering or architectural design experience and is a registered professional engineer or architect. The Contractor shall notify the Contracting Officer, in writing, of the name of the individual and the name of an alternate person assigned to the position.

The Contracting Officer will notify the Contractor, in writing, of the acceptance of the DQC Plan. After acceptance, any changes proposed by the Contractor are subject to the acceptance of the Contracting Officer.

### 3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of design and/or construction. Acceptance is conditional and will be predicated on satisfactory performance during the design and construction phases. The Government reserves the right to require the Contractor to make changes in his CQC plan and operations including removal of personnel, as necessary, to obtain the quality specified.

### 3.2.4 Notification of Changes

After acceptance of the CQC plan, the Contractor shall notify the Contracting Officer in writing a minimum of seven calendar days prior to any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

## 3.3 COORDINATION MEETING

After the Pre-design Conference, before start of design and/or construction, and prior to acceptance by the Government of the Quality Control Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 10 calendar days prior to the Coordination Meeting. During the



meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, design activities, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

### 3.4 QUALITY CONTROL ORGANIZATION

#### 3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager, Designer of Record and sufficient number of additional qualified personnel to ensure contract compliance. The Contractor shall provide a CQC organization, which shall be at the site at all times during progress of the construction work and who have complete authority to take any action necessary to ensure compliance with the contract. All CQC staff members shall be subject to acceptance by the Contracting Officer.

#### 3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the on site work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a graduate engineer, graduate architect, or a graduate of construction management, with a minimum of 5 years construction experience on construction similar to this contract. This CQC System Manager shall be on the site at all times during construction activities and shall be employed by the prime Contractor. The CQC System Manager shall be assigned no other duties. An alternate for the CQC System Manager will be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate will be the same as for the designated CQC Manager.

#### 3.4.3 CQC Specialists

[NOTE TO SPECIFIER: OPTIONAL ADDITIONAL PERSONNEL - SELECT AS NEEDED- BUT KEEP TO MINIMUM NECESSARY]

In addition to CQC personnel previously specified, the Contractor shall provide as part of the CQC organization specialized personnel to assist the CQC System Manager in the areas listed below. The staff listed below shall be directly employed by the prime Contractor. The CQC specialist shall be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals may perform other duties but must be allowed sufficient time to perform their assigned quality control duties as described in the Quality Control Plan.

EXPERIENCE MATRIX- [EXAMPLES-EDIT AS NECESSARY FOR JOB]

Area	Qualifications
a. Mechanical:	Graduate Mechanical Engineer with 2 years experience or a technician with 5 years related experience.
b. Electrical:	Graduate Electrical Engineer with 2 years experience or a technician with 5 years related experience.
c. Occupied Barracks Coordinator:	Person, customer relations type, coordinator experience.

d. Submittals: Submittal Clerk with 1 year experience.

#### 3.4.4 Additional Requirement

In addition to the above experience and education requirements, the CQC System Manager shall have completed the course entitled, "Construction Quality Management for Contractors". Specific times and locations for this training are available from the Contracting Officer.

#### 3.4.5 Organizational Changes

The Contractor shall obtain Contracting Officer's acceptance before replacing any member of the CQC staff. Requests shall include the names, qualifications, duties, and responsibilities of each proposed replacement. Upon acceptance of any changes, the Contractor shall revise the CQC plan to accurately reflect the changes. The CQC plan shall be kept current at all times during the life of the contract.

### 3.5 SUBMITTALS AND DELIVERABLES

Materials submittals, as necessary, shall be made as specified in Section 01330 - SUBMITTAL PROCEDURES. Design submittals shall be made as required in Section 01012 - DESIGN AFTER AWARD. The CQC organization shall be responsible for certifying that all submittals are in compliance with the contract requirements.

### 3.6 IMPLEMENTATION OF GOVERNMENT RESIDENT MANAGEMENT SYSTEM (RMS) FOR CONTRACTOR QUALITY CONTROL OF CONTRACT

The Contractor shall utilize a Government-furnished software program entitled "RMS" (Resident Management System) to maintain critical information needed to manage the project. RMS produces up-to-date management and analysis reports as well as a majority of the forms required in this contract for submission to the Government. One such form is the Daily CQC Reporting System form, which is required to be utilized by the Contractor. This form may be in addition to other Contractor desired reporting forms. However, all other such reporting forms shall be consolidated into this one Government specified Daily CQC Report Form.

The Contractor will also be required to complete RMS Program Module elements which includes, but is not limited to, Prime Contractor staffing; letter codes; planned cumulative progress earnings; subcontractor information showing trade, name, address, point-of-contact, and insurance expiration dates; definable features of work; pay activity and activity information; required Quality Control tests tied to individual activities; planned User Schooling tied to specific specification paragraphs and contractor activities; Installed Property Listing, Transfer Property Listing and submittal information relating to specification section, description, activity number, review period and expected procurement period. The sum of all activity values shall equal the contract amount, and all Bid Items, Options and Additives shall be separately identified, in accordance with the "Bidding Schedule". Bid Items may include multiple Activities, but Activities may only be assigned to one such Bid Item. This Module shall be completed to the satisfaction of the Contracting Officer prior to any contract payment (except for Bonds, Insurance and/or Mobilization, as approved by the Contracting Officer) and shall be updated as required.

During the course of the contract, the Contractor will receive various Quality Assurance comments from the Government that will reflect corrections needed to Contractor activities or reflect outstanding or future items needing the attention of the Contractor. The Contractor will acknowledge receipt of these comments by specific number reference on his Daily CQC Report, and will also reflect on his Daily CQC Report when these items are specifically completed or corrected to permit Government verification.

The Contractor's schedule system shall include, as specific and separate activities, all Preparatory Phase Meetings (inspections); all O&M Manuals; and all Test Plans of Electrical and Mechanical Equipment or Systems that require validation testing or instructions to Government representatives.

The following minimum hardware and software requirements are needed by the Contractor to run RMS:  
A personal computer with Pentium II processor (or higher)  
Sixteen megabytes (MB) or more of random access memory (RAM)  
30 MB of free hard disk space  
A 3-1/2 inch high density floppy drive. Also needed is a  
HP LaserJet Series III printer or later (or compatible),  
A color monitor,  
MS-DOS, version 5.0 or later, RMS will run under the Windows Operating System

Once the Contract is awarded, the Contractor will be given a copy of the RMS program for implementation. A meeting between the Government and the Contractor will be arranged to inform the Contractor on the use of the software package which is similar to the one the Government will use to manage the project. File updates will be transferred to the Government by disk on a weekly basis, unless electronic transfers are agreed on.

### 3.7 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the design and construction, to include work of the designer of record, consultants, subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable features of work as follows:

#### 3.7.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

- a. A review of each paragraph of applicable specifications.
- b. A review of the contract drawings.
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. A review of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.
- j. Discussion of the initial control phase.
- k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. [The time and date of the preparatory meeting shall be logged in RMS QC.] The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

#### 3.7.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

- a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
- b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.
- c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.
- d. Resolve all differences.
- e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
- f. The Government shall be notified at least 24 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.
- g. The initial phase should be repeated for each new crew to work on site, or any time acceptable specified quality standards are not being met.

### 3.7.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon or conceal non-conforming work.

### 3.7.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable, if there are changes in the applicable CQC staff, onsite production supervision or work crew, if work on a definable feature is resumed after a substantial period of inactivity, or if other problems develop.

## 3.8 TESTS

### 3.8.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

- a. Verify that testing procedures comply with contract requirements.
- b. Verify that facilities and testing equipment are available and comply with testing standards.
- c. Check test instrument calibration data against certified standards.
- d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
- e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test will be given. If Approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility will be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract. The Contractor shall maintain a test log of all tests performed, by type, date, and specification section.

### 3.8.2 Testing Laboratories

#### 3.8.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

#### 3.8.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge of [\$1,000.00] [Design District to insert costs] to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

### 3.8.3 On Site Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

## 3.9 COMPLETION INSPECTION

### 3.9.1 Punch-Out Inspection

Near the completion of all work or any increment thereof established by a completion time stated in the Special Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the CQC System Manager shall conduct an inspection of the work and develop a punch list of items which do not conform to the approved drawings and specifications. Such a list of deficiencies shall be included in the CQC documentation, as required by paragraph DOCUMENTATION below, and shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

### 3.9.2 Pre-Final Inspection

The Government will perform this inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or an particular increment thereof if the project is divided into increments by separate completion dates.

### 3.9.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at this inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be

complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

#### 3.9.4 Post Completion Feedback Meeting and Preparation of Written Minutes

At the completion of this project, the CQC Systems Manager will host a meeting to review the project and to discuss lessons learned during the construction of the project. This meeting should be scheduled for 4 hours on-site and should be attended by the Project Manager and representatives of the major subcontractors, including mechanical and electrical. The Contracting Officer will invite members of the design team to participate in this meeting.

#### 3.10 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

- a. Contractor/subcontractor and their area of responsibility.
- b. Operating plant/equipment with hours worked, idle, or down for repair.
- c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.
- d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action.
- e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
- f. Submittals reviewed, with contract reference, by whom, and action taken.
- g. Offsite surveillance activities, including actions taken.
- h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
- i. Instructions given/received and conflicts in plans and/or specifications.
- j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

##### 3.10.1 Correspondence

The Contractor shall establish and implement a serialized numbering system for letters sent to the Government. The numbering system shall identify the contract number and shall progress sequentially starting with the number one (1) and continuing thereafter without break in numbering. All letters sent to the Government shall include a subject heading which identifies the Contract Clause Number, Special Clause Number, or Technical Provision Number, and the particular subject item addressed by the letter.

#### 3.11 SAMPLE FORMS

Project Name

Project No. \_\_\_\_\_  
UFC 4-721-11.1, UEPH Complexes, 26 Nov 01

Sample forms are enclosed at the end of this section as follows:

[Design District to include applicable form samples at the end of this section.]

### 3.12 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the worksite, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

-- o o --

Project Name

Project No. \_\_\_\_\_  
UFC 4-721-11.1, UEPH Complexes, 26 Nov 01

**ATTACHMENT 2**

**NOT USED**



Project Name

Project No. \_\_\_\_\_  
UFC 4-721-11.1, UEPH Complexes, 26 Nov 01

**ATTACHMENT 3**

**NOT USED**

Project Name

Project No. \_\_\_\_\_  
UFC 4-721-11.1, UEPH Complexes, 26 Nov 01

**ATTACHMENT 4**  
**PROPOSAL DATA SHEET**

**ATTACHMENT 4****PROPOSAL DATA SHEET**[PROJECT TITLE][PROJECT LOCATION]**Note to Design Activity**

Inclusion of the Performance Capability Data Sheet in the RFP is the USACE design activity's option. Requirements for demonstration of offeror capability are stated in the RFP Section 00110. The performance capability evaluation is also referred to as STEP 1 in RFP Section 00120, EVALUATION CRITERIA FOR TECHNICAL PROPOSALS. When using the following coordinate with APPENDIX A of the Project Management Manual (Volume 1), STEP 1 OFFEROR PROPOSAL EVALUATION MANUAL.

**Note to Offerors**

This OFFEROR PERFORMANCE CAPABILITY PROPOSAL DATA SHEET must be completed and attached as the first page of the body of your proposal. The information required by this data sheet may be completed directly on this form or attached to the form as supplemental data sheets.

**1. NAME OF OFFEROR.**

Name of Offeror(s):

If a joint venture or contractor-subcontractor association of firms, list the individual firms and briefly describe the nature of the association.

Firm 1:

Firm 2:

Firm 3:

Firm 4:

Nature of Association:

**2. AUTHORIZED NEGOTIATORS. FAR 52.215-11**

The offeror or quoter represents that the following persons are authorized to negotiate on its behalf with the Government in connection with this Request for Proposals (RFP) or quotations.

[List names, titles, and telephone number of the authorized negotiator.]

Name of Person Authorized to Negotiate:

Contact's Address:

Contact's Telephone:

Project Name

Project No. \_\_\_\_\_  
UFC 4-721-11.1, UEPH Complexes, 26 Nov 01

**PROPONENT.** If different from 2. above.

Name:

Address:

Telephone:

**3. PROJECT EXAMPLES.** On an attached sheet, list (preferably three) projects of similar design that have been done by the offeror. List date of construction completion, address of building(s), address and telephone number of owner. Indicate type of project (private sector, Government, planned unit development, etc.), general character, total cost, and total cost of all modifications. If offeror is made up of separate design and construction companies that have combined for this project, then this item must be completed twice (once for each company).

a. On an attached sheet, list any projects within the last five years that have been assessed liquidated damages. Provide explanation.

b. On an attached sheet, list any projects within the last five years that have been terminated. Provide explanation.

c. On an attached sheet, list all contracts with the Government within the last five years. Indicate Government contract number and contracting agency (with contact names and telephone numbers).

**4. PERSONNEL WITH PRINCIPAL RESPONSIBILITY.** Include a brief resume for each person listed on an attached sheet.

KEY DESIGN PERSONNEL		
Position	Name	State of Registration
Project Manager		
Architect		
Landscape Architect		
Structural Engineer		
Electrical Engineer		
Mechanical Engineer		
Civil/Site Engineer		
Geotechnical Engineer		
Other (e.g., Kitchen Designer)		

Project Name

Project No. \_\_\_\_\_  
UFC 4-721-11.1, UEPH Complexes, 26 Nov 01

KEY CONSTRUCTION PERSONNEL		
Position	Name	Type of Registration & State
Quality Control Manager		
Construction Manager		
Superintendent (if different)		

a. On a separate sheet, list current contracts by nature, duration, and amount, including those for which your firm is now competing or negotiating. Describe the impact of such work on this project if you are determined to be the successful proposer. Furnish a curve with the record of placement of your firm over the past three years, and your projection for the next two years. Provide a statement of the priority of this project relative to other current and anticipated commitments. Indicate the type and extent of home office support you contemplate for this project on a regular and contingency basis.

b. Indicate the approximate number of people currently on company payroll in design and construction.

c. Indicate the approximate number of people you think will be available to work on this project in both design and construction.

d. Indicate the approximate workload currently in your office in both design and construction.

(1) In Design: \_\_\_\_\_ No. Projects: \_\_\_\_\_ U.S. Dollar Volume:

(2) In Construction: \_\_\_\_\_ No. Projects: \_\_\_\_\_ U.S. Dollar Volume:

e. Indicate your office capabilities for using CADD (Computer Aided Design and Drafting) and other forms of automation on this project.

f. You may provide additional information on your capabilities, but please be brief.

**5. MANAGEMENT PLAN AND QUALITY CONTROL PLAN.** Provide your Management Plan. The term "Management Plan" is defined as a plan that includes the following subplans:

Quality Control Plan.

Design Schedule.

Construction Schedule (Network Analysis).

Contract Closeout Plan.

## **6. OTHER FACTORS.**

a. Has the offeror's staff visited the project site?

b. Did offeror attend pre-proposal site visit?

Project Name

Project No. \_\_\_\_\_  
UFC 4-721-11.1, UEPH Complexes, 26 Nov 01

**ATTACHMENT 5**  
**PROPOSAL DRAWING FORMAT**

**ATTACHMENT 5****PROPOSAL DRAWING FORMAT**

NOTE TO USACE DESIGN ACTIVITY: TECHNICAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS are stated in Section 00110A. Inclusion of additional drawing format standards in the RFP is optional. If this attachment is used, it should be coordinated with Section 00110A.

**1. POLICY.**

Drawings shall be prepared in accordance with Section 00110A, PHASE 2 TECHNICAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS, and the following instructions on graphic format.

**2. DRAFTING.**

- a. The drawings shall show sufficient detail so that they clearly delineate the proposed construction. Original drawings shall be made on size standard size A1 [approximately 594mm x 841mm, 23 1/2" x 33"] sheets, and CADD format as defined by the design agent. The final proposal submittal of drawings shall also be in CADD format on A1 standard full size sheets. The revision block and title block shall be as provided by the design agent. Design agent may request offerors to provide proposal drawings in half-size format. [Insert Revision Block and Title Block Example at end of this attachment.]
- b. The first or cover sheet shall contain the title and location of the project and the Drawing Index.
- c. The drawing layout will be evaluated with care before the beginning of the drafting. Ample space, without crowding, will be provided, not only for the required plans and details with all necessary titles, dimensions and notes, but also for incidental information required, such as graphic scales, general and reference notes, schedules, North Arrow, etc.
- d. Sheets shall be well ordered and drawn at the scales indicated in Section 00110A. Any drawings not specifically listed shall be drawn at a reasonable scale and suitable for reduction. Cluttered and overcrowded layouts shall be avoided.
- e. A graphic scale for each of the different scales used on a drawing shall be placed on the particular drawing to the left of the title block. Scale shall be indicated at each plan, elevation, section, and detail, unless all drawings on the same are at the same scale. No scale larger than 1:2 shall be used without prior approval.
- f. Sheets devoted to details should have such details reasonably spaced and arranged left to right or top to bottom. Groups of details relating to one particular aspect should be adequately separated from other groups and identified with a title. Sections and details of the final design should be numerous enough to show all design features.
- g. Unnecessary details or details of small standard products or items which are adequately covered by specifications and/or catalogs shall not be included on the drawings.
- h. A symbol for major disciplines should be selected to properly arrange the sheets in the package. Adequate cross-referencing must be shown to avoid confusion and misunderstanding between disciplines.

**3. DRAWING PREPARATION.**

- a. Preparation for Size Reduction. Since drawings will be reduced, all drafting (line widths, spacing, lettering sizes, etc.) shall be adequate size and density to be easily legible after reduction.
- b. Scales. Carefully plan drawing layout together with suitable scales in advance to properly delineate the project. Similar work for all design disciplines shall, whenever possible, be shown at the same scale on the various drawings involved.
- c. Lettering. Use single stroke lettering, all capitals. Minimum height shall be 5/32".
- d. Sheet Reference. The proposer will reference all drawings within a discipline of work. The divisions designated below will be utilized.

Discipline Designation	Design Discipline
T	Title, Location Map, & General Notes
L	Site Planning, Landscaping Planting and Children's Outdoor Play Areas
C	Civil Engineering
A	Architecture
S	Structural Engineering
M	Mechanical Engineering
E	Electrical Engineering
G	Geotechnical Engineering

- e. Drawing Designation. Each drawing in the particular division shall be designated by the discipline designation and sheet number (i.e., E-6 is the sixth electrical drawing.) This system as listed will be used in establishing sequence of drawings. The notation system shall be placed in the last increment of the drawing number block entitled "sheet."
- f. Ring Number. Consecutive ring numbering shall begin with the cover sheet. Ring number shall be placed in a circle directly below "Sheet" block of the Title Block. Sheets inserted after ring numbers have been finalized shall be designated with the ring number of the original sheet preceding it and an alpha from A to Z beginning with A (i.e., ring 32A follows ring 32).
- g. Cross Reference. Cross-referencing for sections and details shall be based on the sheet reference number.
- h. Symbols and Conventions. Symbols and conventions serve two main purposes. One is to simplify the drawing and improve comprehension; the other is to follow or establish a standard which is easily recognized. Symbols shall be the standards used by the various disciplines.
- ii. Legends. Place legends of symbols and material indications on the drawings. Since many symbols are limited to certain design disciplines, use separate symbol legends on the initial sheet of each design discipline. Symbols in the legend shall be at the same scale or slightly larger than used on the drawings.



## **ATTACHMENT 6**

### **SITE AND LOCALITY MAPS**

USACE Design District shall include general site and locality maps in this attachment for information purposes. Maps included in this attachment are not meant to provide driving directions for potential contractors.

## **ATTACHMENT 7**

### **PROJECT AND SAFETY SIGNS**

USACE Design Activity to include the size and design requirements for the project and safety signs. Included with this TI are samples which are suitable for adoption at the discretion of the USACE Design District.

## **ATTACHMENT 8**

### **GEOTECHNICAL REPORT**

USACE Design District shall include in this attachment the geotechnical report for the proposed housing construction site. This report should include boring logs, a site map identifying bore hole locations, and an engineering analysis of the soils information which makes recommendations and conclusions with respect to the suitability of the existing site soils to support the proposed project.

If the USACE Design District Geotechnical Engineer feels that the site conditions warrant specific mandatory requirements for a particular project, those requirements must be included in the Statement of Work as well as included in this appendix.

## **ATTACHMENT 9**

### **EXCERPTS FROM THE INSTALLATION DESIGN GUIDE**

USACE Design District shall obtain from the Installation copies of the Installation Design Guide (IDG). PA/PE shall thoroughly review the IDG with the Installation Project Manager and identify all areas of the IDG which could apply to the construction of the new UEPH Facilities. Those pieces of the DG shall be included in the solicitation in this attachment for review, use, and consideration by the contractor.

Complete copies of the IDG inserted in this attachment is discouraged as it will add volume to the solicitation with little additional value added to the project.

## **ATTACHMENT 10**

### **FIRE FLOW DATA**

USACE Design District shall obtain from the Installation the flow and pressures available in the domestic water mains adjacent to the proposed development site. If the Installation does not have this information available, the Design District shall take steps to have tests done to secure this information as part of the development of the solicitation.

## **ATTACHMENT 11**

### **LIST OF DRAWINGS**

USACE Design District shall include a list of all informational drawings provided as part of the solicitation. Typical drawings include topographic surveys of the proposed site as well as utilities information and proposed tap points for the utilities to serve the new housing development.

## **ATTACHMENT 12**

### **ASBESTOS AND LEAD PAINT SURVEY RESULTS**

If the project includes the demolition of existing structures, the provision of the asbestos and lead survey and testing results is imperative to the success of the project. USACE Design District must include this information in the solicitation.

Typically the Installation can provide this information for inclusion in the solicitation, if this information is not available from the Installation, the Design District shall have these surveys conducted and completed during the development of the solicitation.